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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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KIRKPATRICK & LOCKHART LLP
535 SMITHFIELD STREET
PITTSBURGH, PA 15222

EXAMINER

TUNG, TA HSUNG

ART UNIT	PAPER NUMBER
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1753

5

DATE MAILED: 02/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/95,791

Applicant(s)

BROY E ZAL

Examiner

C. TUNG

Group Art Unit

1743

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— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☐ Responsive to communication(s) filed on _____
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1-41 is/are pending in the application.
- ☐ Of the above claim(s) _____ is/are withdrawn from consideration.
- ☐ Claim(s) _____ is/are allowed.
- ☒ Claim(s) 1-41 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
 - ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☐ Interview Summary, PTO-413
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other _____

Office Action Summary

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4, 13-17, 26, 31, 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasberg 3,410,778 in view of Andrus 2,752,308 or Overmyer 3,132,082, withor without Ashikaga 5,215,644 or Fletcher 5,326,447.

Krasberg discloses an electrochemical cell including a primary anode 66 and a primary cathode 60. See col. 1, line 68 to col. 2, line 70. In the paragraph connecting columns 3 and 4, the patent discloses the problem of gas bubble generation in the cell. Applicant's claims differ by calling for a detection assembly for detecting the presence of a gas pocket formed by such bubbles.

Andrus discloses an electrode 15 arranged at a location such that a circuit comprising the electrode is broken when a gas pocket is formed. In this manner, the formation of any gas pocket is detected. See figure 2; col. 2, line 49. Overmyer discloses a similar arrangement wherein electrodes 28.1, 28.2 can detect a gas pocket formation. See the paragraph connecting columns 2 and 3 as well as col. 43, lines 4-18.

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Ashikaga discloses a pair of electrodes 10, 11 arranged inside a sensor for detecting malfunction of a sensor part. See col. 4, lines 19-36. Fletcher discloses an electrode 14 arranged inside a sensor for detecting malfunction of a sensor part. See col. 4, lines 25-35.

It would have been obvious for Krasberg to adopt a gas pocket detection means in situ in the form of electrodes in view of Andrus or Overmyer, since it is clearly desirable to know if troublesome gas pockets are present so that corrective action can be taken. Also, the electrolyte needed for the detecting electrodes would already be present in the sensor to permit the detection to be arranged in situ in the sensor. This allows a streamlined design and alleviates the need for external, cumbersome equipment. Note that Andrus or Overmyer, while not drawn to an electrochemical sensor, deals with cathodic protection, which is an electrochemical phenomenon. In any event, Ashikaga or Fletcher renders it obvious to locate detecting electrodes within an electrochemical sensor.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krasberg in view of Andrus or Overmyer and Finbow et al 5,668,302.

This claim differs by calling for the attachment of the gas pocket detection means to the gas sensor.

Finbow attaches a cell 7 comprising a pair of calibrating gas generating electrodes to an electrochemical sensor. See col. 2, line 50 to col. 3, line 20. It would have been obvious to provide the gas pocket detecting electrodes of Andrus or Overmyer in a separate cell in view of

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Finbow, because this separate cell can then be attached to an existing sensor and thus allow existing sensors to be retrofitted with a detection means.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1- 4, 13-17, 26, 31, 32 are rejected under 35 U.S.C. 102(b) as being by Ashikaga or Fletcher.

As discussed before, Ashikaga discloses detecting electrodes 10, 11 in addition to primary electrodes 2, 3. See col. 3, line 22 to col. 4, line 58. Fletcher discloses a detecting electrode 14 that can be coupled to primary anode 20. See col. 3, line 56 to col. 4, line 35.

In each patent, the detecting electrodes are capable of detecting any gas pocket formation, since the absence of electrolyte would affect the resistance between the detecting electrodes in the same manner as applicant's detecting electrodes. The fact that the references do not teach the detection of gas pocket formation is irrelevant. As for the method claims 14-18, any gas pocket will inherently be detected by the detecting electrodes of the patents.

For claims 13 and 26, see col. 5, line 18 of Fletcher.

For claim 31, since the detecting electrodes are part of the sensor, they must at some point become "attached" thereto.

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Claims 32-34, 36-39, 41 are rejected under 35 U.S.C. 102(b) as being anticipated by Gates 5,237,855.

Gates discloses optical means for detecting gas bubbles comprising a photoelectric sensor and a light source. The detecting means is mounted by brackets. See col. 4, line 15 to col. 5, line 29.

Stripped of its functional language of intended use, applicant's independent claim 33 appears to call for nothing more than a bracket or brackets, and the dependent claims merely add a light source and a light detector.

As for the expression "kit", it is not being construed here as to require a package or container. In any event, element 22 of Gates can be regarded as a container.

As for claim 41, see col. 5, line 61 of the patent.

Claims 32-34, 36-39, 41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gates.

If the word "kit" were construed as to include a package or container, applicant's claims differ in that respect.

It would have been obvious to place the mounting brackets, the light source and the light detector of Gates into a container or kit to facilitate the sale, packaging and shipping of the various components.

Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gates in view of Japan 59-54936.

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This claim differs by calling for the light source to be a laser.

Japan discloses a bubble detector using a laser light source. See the abstract. It would have been obvious for Gates to adopt laser as its light source in view of Japan, since a laser produces a sharply defined beam well-suited for optical detection.

Claim 32 is rejected under 35 U.S.C. 102(b) as being anticipated by Japan '936, Andrus, Overmyer or Finbow et al.

As discussed before, Japan, Andrus and Overmyer each discloses means for detecting a gas pocket. Since the electrochemical sensor is not positively recited by this claim, the detector of each of the references can be said to be "suitably configured" for attachment to a sensor.

In regard to Finbow, since applicant's pocket detector is nothing more than two electrodes, the cell 7 of Finbow can be said to be a "gas pocket detector".

Claim 32 is rejected under 35 U.S.C. 103(a) as being unpatentable over Japan '936, Andrus, Overmyer or Finbow et al.

If "kit" were construed to comprise a package containing the gas pocket detection means, this claim differs in that respect.

As discussed before, it would have been obvious to place the gas pocket detection means of the references in a kit to facilitate sale, packaging and shipping thereof.

Claims 1, 5-14, 18-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Krasberg in view of Gates or Japan '936.

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Krasberg, as discussed before, discloses a problem of gas bubble formation that can result in gas pockets in an electrochemical sensor. Gates or Japan discloses using optical means including a light source and a light detector to detect gas bubbles. It would have been obvious for Krasberg to adopt an optical bubble detector in view of Gates or Japan, since optical bubble detectors are accurate and can be easily mounted or retrofitted onto a sensor body.

Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Krasberg in view of Gates or Japan '936 and Finbow et al.

This claim further differs by calling for the retrofitting of a bubble detector onto a sensor.

As discussed before, Finbow shows mounting a cell to a sensor body. It would have been obvious to retrofit a bubble detector onto the sensor body of Krasberg in view of Finbow, since that is an easy way to adopt a bubble detector to an existing sensor that doesn't have one.

Claims 5-12, 18-25, 32-41 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5 and 18, the last four lines do not read correctly and are not understood. Also, it is not evident how the light travels both a direct path and a refracted path when no gas pocket is present. It would appear that the light would travel a direct path only when there is no gas pocket.

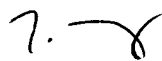
Claim 32-41, the expression "kit" is indefinite. Does the expression include a package or container? Is the expression a closed one so as to exclude components other than those set forth?

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Claim 33 is so replete with functional language that it is not clear what elements are actually being claimed. As best understood, the claim appears to call for nothing more than a bracket or brackets. Is this what applicant intends? Surely, applicant does not regard a bracket or brackets per se to be inventive.

The Japanese documents cited in the IDS of 1-11-2002 have been considered to the extent of their English abstracts. If these documents disclose relevant features (e.g. electrochemical sensor, mounting brackets) beyond what is set forth in the abstracts, applicant should call these to the examiner's attention or submit translations for consideration.

The examiner can be reached at 703-308-3329. His supervisor Jill Warden can be reached at 703-308-4037. Any general inquiry should be directed to the receptionist at 703-308-0661. A fax number for TC 1700 is 703-872-9310.



Ta Tung

Primary Examiner

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